



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/539,829

06/20/2005

Kenji Ikoma

2691-000020/US

5866

30/593

7590

08/12/2008

HARNESSE, DICKEY & PIERCE, P.L.C.

P.O. BOX 8910

RESTON, VA 20195

EXAMINER

ALIE, GHASSEM

ART UNIT

PAPER NUMBER

3724

MAIL DATE

DELIVERY MODE

08/12/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/539,829

Applicant(s)

IKOMA, KENJI

Examiner

GHASSEM ALIE

Art Unit

3724

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,10 and 12-15 is/are rejected.
- 7) ☒ Claim(s) 2, 8-9 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/808)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

Claim Objections

1. Claim 1, 4 and 6 are objected to because of the following informalities: in claims 1 and 6, “a counter weight” should be --a first counter weight--. In claim 4, line 6; “crank rods” should be --crank rods--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1, 3-7, 10 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Irwin (6,067,886) in view of Cain (2,706,637). Regarding claims 1 and 6, Irwin teaches a vibration dampen apparatus for reciprocating drive, for damping vibration occurring upon conversion of rotary motion from a rotation outputting shaft of a rotation drive source to reciprocal motion in a reciprocating drive direction. Irwin also teaches a first conversion mechanism 18 having a first rotary shaft 24 and a first drive position provided eccentrically from the first rotary shaft 24 to convert a rotary motion of the first rotary shaft to reciprocal motion in the direction of the reciprocating drive direction. Irwin also teaches that the first conversion mechanism further includes a first counter weight 22 having a center of gravity in a position on a side symmetric with the drive position with respect to the first rotary shaft 2, for balancing an offset load occurring upon motion conversion. Irwin also teaches a second conversion mechanism 20 having a second rotary shaft 24 and a second drive position provided eccentrically from the second rotary shaft, to convert a rotary motion of the second

rotary shaft to reciprocating motion, via the second drive position, in the direction of the reciprocating drive direction. Irwin also teaches that the second conversion mechanism is provided in pair with the first conversion mechanism 18 so as not to be in contact with the first conversion mechanism and arranged symmetric with the first conversion mechanism 18 with respect to a reference virtual plane parallel with the reciprocating drive direction, and the secondary rotary shaft rotates at equal speed reverse to and parallel with the first rotating shaft so that a reciprocating motion in the reciprocating drive direction is included in the second drive synchronously with a reciprocal motion converted by the first conversion mechanism. Irwin also teaches that the second conversion mechanism further includes a second counter weight 22 provided in pair with the first counter weight 22 and having a center of gravity in a position on a side symmetric with the drive position with respect to the second rotary for balancing an offset load occurring upon motion conversion. Irwin also teaches a combining mechanism 12 to extract and combine reciprocal motions in the drive direction converted from rotary motions by the first conversion mechanism and the second conversion mechanism, respectively. See Figs. 1-7 in Irwin. Irwin does explicitly teach that the rotary driving force from the rotation drive source being transmitted via a belt to the first conversion mechanism and the second conversion mechanism; the rotation drive source to drive a rotation output from a driving pulley; a first driven pulley provided on the first rotary shaft; a second driven pulley provided on the second rotary shaft so as to be paired with the first driven pulley; an idle pulley provided so as to freely rotate; and a belt stretched over the driving pulley, the first driven pulley, the second driven pulley and the idle pulley, to convey a rotation drive force from the driving pulley to the first driven pulley and the second driven

pulley so that rotational directions of the rotation drive force become different between the first driven pulley and the second driven pulley. However, the use of alternative drive source for rotating conversion mechanisms in reciprocating devices is well known in the art such as taught by Cain. Cain teaches a rotation drive source for deriving a rotation output from a driving pulley 28; a first driven pulley 30 provided on the first rotary shaft 36; a second driven pulley 31 provided on the second rotary shaft 37 so as to be paired with the first driven pulley; an idle pulley 25 provided so as to freely rotate; and a belt 26, 32 stretched over the driving pulley 28, the first driven pulley 30, the second driven pulley 31 and the idle pulley 25, for conveying a rotation drive force from the driving pulley to the first driven pulley and the second driven pulley so that rotational directions of the rotation drive force become different between the first driven pulley and the second driven pulley. See Figs. 1-6 and col. 3, lines 1-25 in Cain. It would have been obvious to a person of ordinary skill in the art to replace Irwin's driving mechanism for the conversion mechanisms with an alternative driving mechanism, as taught by Cain, since both driving mechanisms as taught by Irwin and Cain are art-recognized equivalents which produce the same result.

Regarding claims 3-5, 7, 10, and 12-15, Irwin teaches everything noted above including that the combining mechanism carries out the combining so that the drive direction is on the reference plane. Irwin also teaches that the first conversion mechanism and the second conversion mechanism are crank mechanisms each provided with a crank rod 30, respectively, and displaceably coupled to the drive position; coupling members pivotally and displaceably coupled to other ends of crank rods, respectively; and a guide mechanism for guiding a reciprocal motion combined by the coupling member, in the drive direction. Irwin

also teaches that center-of-gravity positions of the first and second counterweights and the drive direction are on a virtual plane perpendicular to the reference virtual plane. Irwin also teaches that the cutting head reciprocally drives a cutting blade on a reciprocal motion combined by the combination mechanism.

Allowable Subject Matter

4. Claims 2, 8-9 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Amendment

5. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection. It should be noted that the new ground of rejection is necessitated by the extensive amendments to claims 1 and 6.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than

SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ghassem Alie whose telephone number is (571) 272-4501.

The examiner can normally be reached on Mon-Fri 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, SEE <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GA

/Ghassem Alie/

Primary Examiner, Art Unit 3724

August 5, 2008